

India Welcomes You To The Presentation on Cortical Visual Impairment Strategies for change Developing of service delivery programmes in India.

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Definition for Educational Purposes

Cortical visual impairment (CVI) is a neurological disorder, which results in unique visual responses to people, educational materials, and to the environment. When students with these visual/behavioral characteristics are shown to have loss of acuity or judged by their performance to be visually impaired, they are considered to have CVI.

CVI is also called:

- Neurological visual impairment
- Cerebral visual impairment
- Cortical blindness



Characteristics features of CVI

(According to Christine Roman 2003)

- Colour
- Movement
- Visual latency.
- Visual fields.
- Complexity.
- Light gazing / Non-purposeful gaze.
- Distance Viewing.
- Visual reflexive Response.
- Visual Novelty.
- Visual Motor.

Implications

- Preference of peripheral vision.
- Not able to use two modalities.
- Cerebral visual impairment peripheral vision.
- Visual latency present.
- Light gazer/ photophobia.
- Attracted to movement.
- Preference for Red/Yellow colour.
- Short visual attention span



Situation in India

- Very little awareness about CVI among parents and rehab professionals
- Static's on incidence and prevalence of CVI not available.
- Different professionals use different terms and definitions related to CVI. It hampers diagnosis, prognosis and intervention strategies.
- CVI between CP and MR, children not identified.
- LV, Rehab specialist not trained to assess children with CVI.
- Ophthalmologist, Neurologist has a different perspective of looking at CVI while the rehab and educational profession look at it differently.
- Professionals don't know where to refer these children hence cross referrals not made.
- Effective intervention strategies for rehabilitation not available.
- No trained professional they are mostly self-trained.
- Rehabilitation research on different clinical, educational, rehabilitation issues on CVI not conducted and documented.



How to identify CVI children?

- Developing checklist to identify children with CVI.
- Conduct client location studies at
 - Institutions for MR and CP.
 - Early intervention programs.
 - Pediatric OT and PT clinics.
 - Pediatric clinics
- Functional Assessment of children with:
 - Neurological problems.
 - Optic atrophy And R.O.P.
 - Seizure disorder.
 - History of NICU.
 - Infantile spasms.



Early intervention programme.

- Training teachers in vision stimulation.
- Training O.T and P.T.
- Training parents to execute visual efficiency programme.
- Assessment of the child's vision at regular intervals.



Educational interventions

- Developing new strategies for intervention to enhance cognitive and social domains (understanding the implication and characteristics of CVI)
- Providing right augmentative educational material.
- Choosing right learning media (tactile receptors are sometimes affected in children with neurological difficulties).
- Dealing with SI issue that interferes with education process.
- Providing adaptive equipments.
- Making vision stimulation a part of educational programme.
- CVI child have different orientation and mobility needs. Developing an IEP module (Motor, SID and convulsion pattern of the child must be taken into consideration).



Awareness and Training for:

- Awareness programmes for
 - Parents, caregivers and paraprofessional working with multiply impaired children.
 - Staff of Pediatric units at hospitals.
 - Professionals at early intervention center.
- Training at
 - Continued rehabilitation education for teachers
 - Continued medical education for optometrist, OT and PT.
 - Low vision professional
 - Orientation for Ophthalmologist and Neurologist



Case History Of CVI child with CP.

Name: Mohmed Sadah Ali
Date Of Birth: -13.02.2002.
Age: 3 years 10 months.
Diagnoses: Quadriplegia CP.
Cause Of VI: -CVI.

Medical History: When Mohmed was started on Vision therapy his visual skills were very weak. He looked like a blind child. He rarely looked at objects or people. His communication was impaired due to vision. He rarely gave eye contact.

Observation: On a functional assessment of vision it was found that Mohmed had visual impairment. He hardly gave eye contact and did not look at object and people. He showed the typical characteristics of CVI. We started working on his vision from July 2002. He was put on a vision-training programme. The teachers worked on his visual skills at the center while the mother was asked to follow up the programme at home. Within 3 months we started seeing progress in Mohmed. He has now started tracking objects. Improvement in vision has slow progress in occupational therapy also. His communication has improved. Mother child bonding shows striking difference. The mother is very happy she says - "He has now started giving eye contact, laughs when spoken to, earlier he never looked at things around him, now he tries to explore the environment visually."

After six months when we assessed him his visual skills had improved. He now gives eye contact looks at objects and people. According to his mother his communication shows significant improvement due to his enhanced visual skills. He looks at objects and vehicles when he is traveling.

According to the O.T his enhanced visual skills help in occupational therapy, earlier he used to explore the things with his tactile sense. These days he visually explores them, which help his occupational therapy.

Case History of CVI child with developmental delay

Name: Devesh S. Shetty
Date Of Birth: -18.05.2004
Age: 2 1/2 years.
Diagnoses: Delayed milestones
Cause Of VI: CVI.

Medical History: Devesh was a preterm baby born in the 8th month. It was a normal delivery. His birth weight was 2.30 kgs. He cried after birth but was given oxygen on 2nd day. He was in the incubator from day 3. The mother complained that he was not sucking when breast-fed. C.T. Scan (28/12/2005): paucity of white matter in periventricular area predominantly in relation to occipital horns. Ophthalmic evaluation report says fundus normal.

Observation: On a functional assessment of vision it was found that Devesh had visual impairment. He hardly gave eye contact and did not look at object and people. He showed the typical characteristics of CVI. We started working on his vision from July 2002. He was put on a vision-training programme. The teachers worked on his visual skills at the center while the mother was asked to follow up the programme at home. Within 3 months we started seeing progress in Devesh. He has now started tracking objects. Improvement in vision has slow progress in occupational therapy also. His communication has improved. Mother child bonding shows striking difference. The mother is very happy she says - "He has now started giving eye contact, laughs when spoken to, earlier he never looked at things around him, now he tries to explore the environment visually."

Case history of CVI child with sensory integration dysfunctioning

Name: Jhanvi Astm
Date Of Birth: -
Age: 3 years.
Diagnoses: microcephaly with cleft palate.
Cause of VI: CVI

Medical History: Jhanvi was born to the parents after a long period of marriage. She is a microcephaly child with sensory integration dysfunctioning. Her reports say CMV she also suffers from congenital heart disease. VI nerve affected.

Observation: A multidisciplinary team assessed Jhanvi. It was found that she had CVI and sensory integration dysfunctioning. We put her on a vision stimulation programme. As her VI nerve is affected she showed ocular motor difficulties. Her SID interfered with her visual efficiency. She becomes very irritable and non-cooperative at times. The OT has put her on a sensory diet. After which we are seeing progress in her vision stimulation programme.

Diagnoses: microcephaly with cleft palate.
Cause of VI: CVI

Case history of CVI child with Deafblindness

Name: Saurabh Dhanavade
Date Of Birth: -
Age: -
Diagnoses: hydrocephaly
Cause of VI: CVI

Medical history: Saurabh was a deafblind child with hydrocephalus. Preterm baby with a history of Perinatal stroke with a history of microcephaly child with sensory integration dysfunctioning. ROP with CD complete fixed open funnel retinal detachment in pre-physical eye. Left eye fundus normal. He had profound hearing loss and showed sensory integration dysfunctioning (SID). He was operated for VP shunt.

Observations: Saurabh is no more passed away last year. He was operated for VP shunt when an infant. To keep him away from any kind of infection he was isolated for a long period by his mother. He had profound hearing loss. He was put on an early intervention programme quite late. He rarely used his residual vision due to his SID. He was on a vision stimulation programme but his progress was very slow. A striking feature about Saurabh was that he behaved like a blind child but he could locate things that interest him. At school when he came to the visitor's hall he would walk straight to his mother no matter where she sat. At home he would surf TV channels. Saurabh showed hand flapping self-stimulatory behavior. But when his teacher appeared he stopped doing it, as his teacher would dissuade him from doing so. His favorite activity in the school was sitting on the swing. He would locate the swing from any position. He hated using his vision for academic activities. He showed most of the CVI characteristics. He was a light gazer, but when we used light for vision stimulation he rarely seemed interested in it.

OTHER STRATEGIES

Adopt multidisciplinary approach. Develop cross-referred system. Making literature available on CVI

- Development a new definition for CVI as it is not only due to the damaged cortex.
- E groups to share information on CVI
- Expertise to be invited.

Conclusion: India has a fairly successful rehabilitation model for the visually impaired. It has moved from traditional institution based to CBR programmes. Multiply impaired children with visual impairment and low vision also likewise receiving some attention. CVI is relatively a virgin area. Some dedicated and committed professionals are realizing that the gap must be reached. However this is a daunting task. India has taken the first small step, which is encouraging news. The presenter is deeply interested in this discipline and would like to share her experience and problems with interested colleagues.

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